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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,827	11/13/2003	Jun Koyama	12732-176001	7838

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EXAMINER	
LAO, LUN YI	

ART UNIT	PAPER NUMBER
2673	

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/705,827	KOYAMA ET AL.	
	Examiner	Art Unit	
	Lao Y Lun	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/23/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 9, 13A, 13B and 17 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1- 44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of copending Application No. 10/118,917 in view of Kuwajima et al(6,339,422).

The copending application(10/118,917) teach a display comprising a first means for diving one frame period into a plurality of subframe periods and expressing n-bits gradation(n is natural number of two or more) in accordance with a total lighting time during a frame period and second means not for dividing one frame period into a plurality of subframe periods and second means for setting one of lighting and non-lighting to the one frame period, for expressing 1-bit gradation in accordance with a total lighting time during the one frame period, and for operating the display with a lower clock frequency than the first means (see claims 1-16).

The copending application teach(10/118,917) fails to disclose second means having a lower driving voltage or current than the first means.

Kuwajima et al teach a voltage applied to the pixel element in the frame period of the first display mode is higher than in the frame period of the second display mode(see figures 2-3; column 7, lines 66-68 and column 8, lines 1-6). It would have been obvious to have modified the copending application(10/118,917) with the teaching of Kuwajima et al, since more gray scale level need more voltage.

As to claims 7, 8, 16, 26-27 and 35, it would have been obvious to have a current supplied to the pixel element in the frame period of the first display mode is

larger than frame period of the second display mode since Kuwajima et al teach a voltage applied to the pixel element in the frame period of the first display mode is higher than in the frame period of the second display mode(see figures 2-3; column 7, lines 66-68 and column 8, lines 1-6) and the current will increased when the voltage is increase.

4. Claims 1-44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-26 of copending Application No. 10/385,712 in view of Kuwajima et al(6,339,422)

The copending application(10/385,712) teaches a display comprising a first means for diving one frame period into a plurality of subframe periods and expressing n-bits gradation(n is natural number of two or more) in accordance with a total lighting time during a frame period and second means not for dividing one frame period into a plurality of subframe periods and second means for setting one of lighting and non-lighting to the one frame period, for expressing 1-bit gradation in accordance with a total lighting time during the one frame period, and for operating the display with a lower voltage or current than the first means (see claims 1-26).

The copending application(10/385,712) fail to disclose a second manes for operating display with lower clock frequency than the first means.

Kuwajima et al teach a display disclose a second manes for operating display with lower clock frequency(70HZ) than the first means(140HZ)(see figures 2-5 and column 10, lines 10-19). It would have been obvious to have modified the copending

application with the teaching of Kuwajima et al, so as to save power when the display operated in a binary display.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeta et al(6,088012) in view of Kuwajima et al(6,339,422).

As to claims 1-44, Noecker et al teach a display device comprising: a display; a first means for dividing a first frame period into a plurality of subframe periods that one of lighting and non-lighting is set to each of the subframe periods and expressing gradation in accordance with a total lighting time during a frame period of first display mode(e.g. 12 bits), and a second means for setting less gradation during a frame period of a second mode(e.g. 8 bits)(see figures 1-3, 12-13; column 1, lines 13-36; column 4, lines 12-45; column 6, lines 25-68 and column 7, lines 1-65).

Shigeta et al fail to a second means for setting to one of one-lighting and one-non-lighting during a frame period of a second display mode and a second means having a lower clock frequency or longer frame period than a first means.

Kuwajima et al teach one of one-lighting and one-non-lighting(black and white binary data) during a period of a second display mode(see figures 1-5; column 4, lines 48-60; column 5, lines 20-55; column 6, lines 1-60; column 7, lines 14-53; column 8, lines 31-50; column 9 and column 10, lines 4-30) and a second means having a lower clock frequency(longer frame period)(70HZ) than a first means(140HZ)(see figures 2-5 and column 10, lines 10-19). It would have been obvious to have modified Shigeta et al with the teaching of Kuwajima et al, so as to save power by using a black and white display mode.

As to claims 3-4, 14, 22, 23 and 33, Kuwajima et al teach a display device further comprises a frame memory(7), n-bits data (n is natural number of two or more; e.g. n=4) is written and read out so that display is conducted in the a first means(16 level gray-scale mode) and 1-bit data is written and read out so that display is conducted in the second means(black and white display mode(see figures 2-3 and column 5, lines 20-60).

As to claims 5, 6, 11, 12, 15, 19, 24-25, 30-31, 34 and 38, Kuwajima et al teach a voltage applied to the pixel element in the first means is higher than in the second means(see figures 2-3; column 7, lines 66-68 and column 8, lines 1-6).

As to claims 7-8, 16, 26-27 and 35, it would have been obvious to have a current supplied to the pixel element in the frame period of the first means is larger

than the second means since Kuwajima et al teach a voltage applied to the pixel element in the first means is higher than in the second means(see figures 2-3; column 7, lines 66-68 and column 8, lines 1-6) and the current will increased when the voltage is increase with same resistance value.

As to claims 9-10, 17, 18, 26, 28-29 and 36-37, Shigeta et al teach the frame period is composed of three periods of a wiring period, a display period, and an erasing period(see column 5, lines 16-30).

As to claims 39-44, Shigeta et al teach a personal computer(see column 1, lines 36-42)

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kamiya et al teach an LCD display a gray scale mode and a binary display mode(black and white display mode).

Kawakami(6,037,917) teaches a plasma display for reducing light intensity level variation when the input video signal field frequency is varied.

Shigeta et al(6,646,625) teach a method for setting discharge cells to either one of non-light emitting cells or light emitting cells.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi Lao whose telephone number is 571-272-7671. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 30, 2005

Lun-yi Lao
Primary Examiner